



# JRC Newsletter

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APRIL / MAY 2011



## Science – delivering its promise to society

In March 2000, the EU Heads of Government agreed to make the EU 'the most competitive and dynamic knowledge-driven economy by 2010'. A decade later we are far from that goal. Most metrics show that Europe is still trailing behind Japan and the U.S., while China, India and other countries are catching up. In real terms, R&D expenditure

for the EU27 grew by 3.4 % per year for the decade to 2008. However, as a percentage of GDP, it grew more slowly, rising by 0.14 percentage points over this period to just over 1.8 % in 2008. In the same period, R&D intensity rose to 3.4 % in Japan and to 2.8 % in the U.S. If Europe is truly serious about the Lisbon agenda, we need to strengthen our commitment to meeting its targets.

Almost two thirds of total investment in R&D in the EU27 comes from the business sector. It is self-evident that all of this investment of private money is made in the expectation of a financial return. What is sometimes less appreciated is that the parallel investment of public funds is also, for the most part, intended to generate an economic return. In fact, it is part of economic policy. The planning, management and evaluation of this public investment is therefore increasingly done in economic terms.

My duties as Chief Scientific Adviser are to 'provide high level advice on scientific issues of concern to Government across the spectrum of disciplines'. In a small, very open economy, both policy and practice need to very well focused. Starting in 2000, Ireland became very serious about science. In the subsequent decade, both public and private R&D investment increased at about 14 % per year, twice the rate of growth in GDP. Some 3,500 new scientific positions have been added to our seven Universities, with half of these personnel recruited from other countries. In the last five years, publication rates have doubled, and citation of Irish science output is

now above US and EU average levels. Business R&D is increasing in parallel, and last year nearly half of foreign direct investment was in R&D projects.

In all European countries, public budgets are now under strain. Recovery from the financial crisis has become a priority. Spending on health, social measures and maintenance of the full range of public services makes up (to take my own country as an example) three quarters of all public expenditure. The remaining quarter can be considered investment for the future: 8 % on physical infrastructure, 15 % on education and 1 % on R&D. In times of stress, capital works can be reduced or postponed. However, we reduce our commitment to education and knowledge creation at our peril. These are the seedcorns of prosperity a decade and a generation from now.

*"In times of stress, capital works can be reduced or postponed. However, we reduce our commitment to education and knowledge creation at our peril."*

Ireland has been harder hit than other countries by the financial crisis. GDP dropped 7.5 % in 2009 and 1 % in 2010. Despite the resulting crisis in public finance, the budget of Science Foundation Ireland, the main funding agency, has been increased by 7 % this year. Government backing for ESOF2012 has been maintained. In bidding for, and winning, the right to host this event, we are saying that Ireland continues to be serious about science.

PROFESSOR PATRICK CUNNINGHAM  
Chief Scientific Advisor to the Irish government

Prof. Cunningham is the chair of the Euroscience Open Forum (ESOF) in Dublin, to be held on 11-15 July 2012. The Call for Proposals for the Scientific Programme is now open at [www.esof2012.org](http://www.esof2012.org)

## Nuclear safety and security

## NUCLEAR SAFETY

<https://clearinghouse-oef.jrc.ec.europa.eu/>
**Clearinghouse provides daily updates on Japanese nuclear accident**

Nuclear power plant operational experience has been used for many years as a tool to improve the safety of nuclear facilities throughout the world. The European Clearinghouse on Operational Experience Feedback for Nuclear Power Plants was set up in 2008, by the JRC's Institute for Energy (IE). Today, almost all the nuclear safety authorities and technical support organisations of the Member States that have nuclear power plants have joined the Clearinghouse. Scientific and technical research is conducted with in-depth analysis of specific groups of nuclear power plant operations, mainly covering maintenance, fuel damaging and

construction and commissioning of new plants.



*Almost all nuclear safety authorities and technical support organisations of the Member States are members of the Clearinghouse.*

Following the nuclear accident in Fukushima, Japan, the European Clearinghouse has provided daily updates of the situation. This includes technical details about the status of the Japanese plant, the evolution of the radiological releases and the expected consequences on the population and environment.

Note: The updates prepared by the Clearinghouse are available at the following address:  
<https://clearinghouse-oef.jrc.ec.europa.eu/prompt-notifications/fukushima-nuclear-accident/daily-updates-on-the-situation>

## NUCLEAR SECURITY

<http://itu.jrc.ec.europa.eu>
**Boosting mobile radiation detection technologies to counter nuclear threats**

JRC and other international experts discussed implementation of Mobile Radiation Detection (MRD) in support of crisis management in the aftermath of a nuclear incident at a workshop hosted by JRC's Institute for Transuranium Elements (ITU) in Karlsruhe on 8-9 March 2011. This technology can be used for radiation screening or screening of strategic locations, radiation source localisation and timely response to alarms and alerts.

The 25 participants discussed operational aspects based on national experiences in Canada, Finland, France, Germany, and the US. Experts representing the European Commission and IAEA offered an insight into the technical capabilities at international level.

Participants agreed to work together towards enhanced awareness of its benefits and defined concrete steps for developing an international guidance document on the application/implementation of mobile detection technologies for countering nuclear terrorism threats.

The workshop was held under the auspices of the Border Monitoring Working Group (BMWG), an international body established in 2006 to promote and coordinate cooperation on nuclear security at countries' borders. It gathers experts from the United States' Department of Energy, the JRC, the Council of the European Union and the International Atomic Energy Agency (IAEA).



*Experts discuss the implementation of Mobile Radiation Detection (MRD) as an aide to crisis management in the aftermath of a nuclear incident.*



## SECURITY AND CRISIS MANAGEMENT

[http://skm.jrc.it/documents/UserDocuments%5CUPL\\_85252.pdf](http://skm.jrc.it/documents/UserDocuments%5CUPL_85252.pdf)

### ***Monitoring solar storm disruption in satellite signals to improve critical infrastructures***

The JRC has launched its first monitoring campaign of solar storms influence on global navigation satellite systems (GNSS) signals to collect data that will be later used to test the resilience of receivers. The project has taken advantage of the period of increased solar activity that started earlier this year and is expected to last until 2013.

Sun cycles might affect satellite operations, navigation systems (e.g., GPS, GLONASS, and the future Galileo), high-altitude polar flights, electric power distribution, long-line telephone networks, HF radio communication and oil/gas pipeline operations. There is however no sufficient information on the extent of disruption space weather events may provoke.

Therefore, in order to study this phenomenon, the JRC has deployed a GNSS scintillation receiver at its site in Ispra (Italy) since the beginning of the year. GNSS signals are being recorded in order to detect the occurrence of ionospheric scintillations. So far, no major disturbances have been observed.

In addition, JRC will deploy two advanced monitoring stations – designed by its Institute for the Protection and the Security of the Citizen (IPSC) – in locations where ionospheric scintillations are frequently observed, one

near the Equator and a second one in Northern Europe. The collected data will be used to test the resilience of commercial receivers, particularly those used for timing and synchronization services in critical infrastructures such as telecom networks or the power grid.

The results of the project will be shared with the US National Oceanic and Atmospheric Administration (NOAA) under a cooperation agreement with the JRC. NOAA disposes of a sophisticated infrastructure for early warning and operational monitoring of space weather events.



*The JRC studies the effect of solar storms on global navigation satellite systems.*

## CHEMICAL ACCIDENTS

<http://ec.europa.eu/environment/seveso/review.htm>

### ***Supporting the ‘Seveso III Directive’ on the control of major accident hazards***

The Commission recently adopted a new proposal for a Directive on the control of major accident hazards, the so-called ‘Seveso III’ Directive (COM (2010) 781). The JRC developed, together with Member States’ experts and in coordination with the Environment Directorate-General the methodology and scientifically sound options to align Seveso categories with the new classification of dangerous substances and it also analysed the safety impact of these options. For the first time, the scope of the Directive is based on the hazard potential of dangerous substances and activities, as analysed in the JRC report *Application of GHS substances classification criteria*

*for the identification of Seveso establishments*. Furthermore, a number of new requirements are based on the JRC’s work, such as the requirement to address natural hazards as causes of accidents and the requirement to formally include a review of past accidents in the assessment – e.g. from eMARS – with the same substances or processes and to explicitly evaluate specific measures to prevent similar accidents.

Note: The Major Accident Reporting System eMARS is a database of major accidents reported under the Seveso Directive.

<http://emars.jrc.ec.europa.eu/>



*Accidental explosion and fire in an oil storage tank at Buncefield UK (2005). Such accidents are reported and analysed in the JRC eMARS system.*

## Development of a low carbon society

### ENERGY EFFICIENCY

[http://re.jrc.ec.europa.eu/energyefficiency/html/standby\\_initiative\\_data\\_centers.htm](http://re.jrc.ec.europa.eu/energyefficiency/html/standby_initiative_data_centers.htm)

#### *Europe, the U.S. and Japan adopt a common standard for data centres' energy efficiency*

The Power Usage Effectiveness (PUE) measurement standard has been chosen by public authorities in the EU, the U.S. and Japan as the common standard for measuring the energy efficiency of data centres. This will allow data centre operators to measure, calculate, improve and communicate the energy efficiency of their data centres worldwide.

Energy efficiency is highly relevant to data centres in the EU as they consume as much electricity as the whole of the Czech Republic. The JRC has developed codes of conduct for data centres that provides operators along with their equipment vendors with information enabling them to reduce energy and costs by 20–50 % while maintaining performance. Consequently the codes have already been adopted by a number of operators, providing real examples for others to follow and opening up the possibility of significant future energy savings.

This standard was established and developed by a task force which included the JRC, the Green Grid Association (the IT industry's association for efficiency in data centres), the U.S. Department of Energy, the U.S. Environmental Protection Agency, Japan's Ministry of Economy, Trade and Industry and the Japanese Green IT Promotion Council.

It will be applied by data centre operators in the U.S, Europe, and Japan. It determines the amount of energy

used by a data centre considering the amount of IT hardware such as servers inside it.

The JRC is a partner in the harmonisation task force for data centre measurement standards. For this work, it provided technical knowledge and expertise gained through its work on the ICT Codes of Conduct for energy efficiency in collaboration with Member State experts.



*Together, all data centres in the EU consume as much electricity as the whole of the Czech Republic.*

## Sustainable management of natural resources

### CLIMATE CHANGE

[http://www.unep.org/dewa/Portals/67/pdf/Black\\_Carbon.pdf](http://www.unep.org/dewa/Portals/67/pdf/Black_Carbon.pdf)

#### *New assessment of black carbon and tropospheric ozone's role in climate change*



*Measures to reduce emissions of black carbon and tropospheric ozone would help to reduce global warming.*

Black carbon and tropospheric ozone (O<sub>3</sub>) are harmful air pollutants that also contribute to climate change. The emission of both will continue to negatively impact both human health and climate. In order to address this threat, The Integrated Assessment of Black Carbon and Tropospheric Ozone, supported by UNEP and the World Meteorological Organization (WMO), brought together more than 70 experts, including JRC scientists, to assess the state of science and existing policy options for addressing these pollutants.

Among other conclusions, it was highlighted that specific measures could already have a positive impact on climate protection and public health. These measures do not replace those related to carbon dioxide, and their full implementation could reduce global warming by 0.5°C.



The report highlighted that a small number of emissions reduction measures targeting black carbon and tropospheric ozone could immediately begin to protect climate, public health, water and food security, and ecosystems. These measures target fossil fuel extraction, residential cooking and heat-

ing, diesel vehicles, waste management, agriculture and small industries. Full implementation is achievable with existing technology but would require significant and strategic investment as well as institutional arrangements.

Full implementation of these measures

would reduce future global warming by 0.5°C (within a likely range of 0.2–0.7°C). If the measures are implemented by 2030, this could halve the potential increase in global temperature projected for 2050. The rate of regional temperature increase would also be reduced.

## CLIMATE CHANGE

[http://ec.europa.eu/agriculture/analysis/external/livestock-gas/index\\_en.htm](http://ec.europa.eu/agriculture/analysis/external/livestock-gas/index_en.htm)

### *Greenhouse gas effects of European livestock*

The JRC has published a new report providing an estimation of the net emissions of green house gases generated by EU animal production on the basis of a life-cycle assessment.

The calculations estimate a total global warming potential (GWP) of European livestock production of 661 million tons of CO<sub>2</sub>-equivalent, which is the equivalent of 9.1 %–12.8 % of the total EU emissions (2004) – depending on the assumptions for emissions from land use and land use change. This is considerably lower than the estimated 18 % figure for global production presented in the 2006 FAO report *Livestock's long shadow*.

Estimates of emissions per kg of meat show that the highest average net emissions are for ruminant meat (22.2 kg CO<sub>2</sub> equivalent per kg beef and 20.3 kg per kg of sheep and goat meat), while the production of pork (7.5 kg) and poultry meat (4.9 kg) create significantly lower emissions due to a more efficient digestion process and the absence of enteric fermentation.

Average EU emissions from milk production are much lower than those from meat – 1.4 kg of CO<sub>2</sub>-equivalent per kg of

cow milk and 2.9 kg of CO<sub>2</sub>-equivalent per kg of sheep and goat milk.

The report also looks at the likely impact of Brazilian beef and poultry and New Zealand sheep meat. In a hypothetical best case scenario, technological emission reduction measures are estimated to be able to reduce emissions from livestock production systems by 15–19 %.



*Approximately 10 % of greenhouse gas emissions in the EU come from livestock.*

## Safety of food and consumer products

## HEALTH

[http://www.euro.who.int/\\_data/assets/pdf\\_file/0008/136466/Burden\\_of\\_disease.pdf](http://www.euro.who.int/_data/assets/pdf_file/0008/136466/Burden_of_disease.pdf)

### *Environmental noise can lead to health problems*

Environmental noise (noise pollution) poses a potential health risk. According to a new report from the World Health Organisation (WHO), prepared with support of the JRC, environmental noise can lead to a disease burden that is second in magnitude only to that from air pollution, among environmental factors in Europe.

Whereas the direct consequences of noise pollution lead to permanent

hearing loss and impairments, the indirect health effects encompass a wide range of health complications resulting from increased anxiety, psychological distress, depression, and communication problems. In chronic cases this can result in cardiovascular problems.

The report highlights that one in three Europeans experience annoyance during the daytime and

one in five has disturbed sleep at night because of noise from roads, railways and airports. Traffic-related noise accounts for over 1 million healthy years of life lost annually to ill health, disability or early death in the western countries in the WHO European Region.

In order to reduce the health effects of environmental noise, the European Commission, the WHO/Europe and the European Environment Agency are

collaborating closely to improve implementation of the 2010 Parma Declaration and the European Union's noise-related directives. JRC, on behalf of the European Commission's Environment Directorate-General, develops and coordinates the common noise assessment methodological framework (CNOSSOS-EU).

Note: The WHO European Region covers over 880 million people in 53 countries, stretching from the Arctic Ocean in the north, the Mediterranean in the south, the Atlantic Ocean in the west and the Pacific Ocean in the east.

The Parma declaration is accessible at the following address: [http://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0011/78608/Eg3618.pdf](http://www.euro.who.int/__data/assets/pdf_file/0011/78608/Eg3618.pdf)

*Noise comes second after air pollution among the environmental factors that have the highest negative effect on human health in Europe.*



## TEXTILES

<http://publications.jrc.ec.europa.eu/repository/bitstream/11111111/15715/1/lbna24574enc.pdf>

### ***New generic fibre name introduced in EU legislation after JRC tests***

A new generic fibre name has been introduced in EU legislation, therefore allowing its use in textile products. The "polypropylene/polyamide bicomponent" is defined as "a bicomponent fibre composed of between 10 % and 25 % by mass of polyamide fibrils embedded in polypropylene matrix".

The JRC tested various methods in order to make sure this new fibre can be identified and quantified, and found several of them fit-for-purpose. This way, the information was included in two new amendments to the EU textile legislation, which will allow the novel fibre to enter the European market as soon as the new directives are published.

Having new fibres listed in EU legislation is mandatory for the producers. The EU consumer legislation requires all textile products to be labelled using fibre names and definitions that have been recognised by all EU countries.

Companies that have developed new fibres

need to provide information on their physical-chemical characteristics and on the analytical methods that can be used for their characterisation. The fibres and analytical methods are tested and validated by JRC's Institute for

Health and Consumer Protection (IHCP), which acts as the European Commission's in-house reference centre in this area. Since 2003, five new fibres have been studied by the JRC, and after their names had been adopted by the EU Member States and introduced in the EU textile legislation. In parallel the laboratory deals with chemical release from non-food consumer products in particular from textiles, leather products (such as shoes) and cosmetics.

The textile and clothing industry plays a crucial role on the economy and social well-being in numerous regions of the EU. In 2006 the EU had some 220 000 textile and clothing companies employing 2.5 million people and generating a turnover of €190 billion, accounting for 3 % of total manufacturing value added in Europe.



*EU consumer legislation requires all textiles products to be labelled using fibre names and definitions that have been recognised across Europe.*



## Reference materials and measurements

### BIOFUELS

[http://ec.europa.eu/energy/renewables/biofuels/bioenergy\\_liquid\\_biofuels\\_en.htm](http://ec.europa.eu/energy/renewables/biofuels/bioenergy_liquid_biofuels_en.htm)

#### *Towards international measurement standards for biofuels*

There is an increasing demand to accurately measure the quality of biofuel products (biodiesel and bioethanol), particularly in view of European directives promoting renewable energies and setting out quality requirements for fuel. Until now, there has been no international consensus on the technical specifications of biofuels. Nor has it been fully clear what measurement standards and quality control tools in form of reference materials and measurement techniques are needed to meet legislative requirements.

BIOREMA (REference Materials for BIOfuel specifications) was an international project on biofuel reference materials involving JRC's Institute for Reference Materials and Measurements (IRMM) which recently published its final results. The project demonstrated that it is feasible to prepare biodiesel and bioethanol reference materials with reference values traceable to the international system (SI) of units for a range of parameters. However,

further research is needed for several parameters such as for glycerides in biodiesel and acidity in bioethanol.

The project also carried out inter-laboratory comparisons using biodiesel and bioethanol test materials prepared throughout the project. The exercise showed that the measurement capabilities of the field laboratories were often good in the case of biodiesel, although the availability and use of certified reference materials will certainly enhance the comparability

of measurement results for many parameters. For bioethanol, the consensus values for density, ethanol and water were in very good agreement with the reference values. However, several other parameters, such as electrolytic conductivity and acidity, exhibited poor measurement reproducibility. Overall, there is a pressing need for (certified) reference materials to improve measurement reproducibility.

The project was funded under FP7 and JRC's partners included the National Institute of Standards and Technology (NIST, USA), the National Institute of Metrology, Standardization and Industrial Quality (INMETRO, Brazil), the Dutch National Metrology Institute (VSL, the Netherlands), and the British National Metrology Institute's National Physical Laboratory (NPL, UK) and LGC Ltd (UK). The final summary report of the project is available online ([http://ec.europa.eu/energy/renewables/biofuels/doc/liquid\\_biofuels/publishable\\_summary.pdf](http://ec.europa.eu/energy/renewables/biofuels/doc/liquid_biofuels/publishable_summary.pdf)).



*BIOREMA has effectively demonstrated that it is possible to prepare reference materials for biofuels.*

### TRAINING

<http://www.trainmic.org/>

#### *10th anniversary of TrainMiC®*



This year, the TrainMiC® (measurement science in chemistry training) programme celebrates its 10th anniversary. It was launched by the JRC's Institute for Reference Materials and Measurements (IRMM) to

improve the quality of analytical results all over Europe and has trained over 5800 scientists. It provides European-wide, harmonised training for metrology in chemistry via a network of national providers.

The programme aims at the harmonised interpretation of the metrological requirements of ISO/IEC-17025 – the main standard for chemical and bio-analytical measurements in

different sectors such as environment, food or consumer protection. It supports Commission initiatives such as the Europe 2020 Strategy initiative, "Agenda for new skills and jobs".

TrainMiC® operates across Europe via national teams, which share pedagogic tools that have been harmonized by an editorial board. The training material has been translated into 14 different languages.

Training and knowledge transfer are essential to the JRC-IRMM's mission of promoting a common and reliable European measurement system in support of EU policies. A high-quality, well-functioning measurement infrastructure in Europe depends not only on reference materials and measurements, but also on the availability of trained and competent practitioners.

## Towards an open and competitive economy

### HIGHER EDUCATION

<http://publications.jrc.ec.europa.eu/repository/handle/11111111/15590>

#### *Analysing the robustness of university rankings*

A paper published by the JRC on research policy calls into question the use made by media and social actors of popular world university rankings such as the Academic Ranking of World Universities (ARWU) of Shanghai Jiao Tong University and the UK's Times Higher Education Supplement (THES). These rankings regularly ignite a lively debate on the quality of EU university systems.

Although these ranking are highly controversial – and are disliked by a large segment of the academic community – they are routinely taken at face value by the media and are thereby politically influential. This can create sub optimal policy choices. For instance, a policy maker might be tempted to merge universities, just because these rankings tend to favour large universities.

The league tables that underpin the rankings are sensitive to both the conceptual framework and the modelling choices made in their construction. The JRC carried out a robustness analysis to test what inference can be drawn based on these measures. The JRC analysis propagated plausible sources of uncertainties throughout the construction of the index to measure the volatility of the rank of a given university and the overall ranking of a country in terms of good universities.

The report concludes that while university-level and country-level statistical inferences are very fragile, the

inference on macro-regions is more robust. In other words, these rankings are good at highlighting the disparity in performance of continental Europe versus the US, and to identify the best British universities, but cannot be used to pick winners among individual countries in continental Europe.

References: Michaela Saisana, Béatrice d'Hombres and Andrea Saltelli. Rickety numbers: Volatility of university rankings and policy implications. *Research Policy*, 2011, Vol. 40 No. 1, pp. 165-177. Paruolo, P. Saltelli, A., and Saisana, M.: Ratings and rankings: Voodoo or Science? Submitted to the *Journal of the Royal Statistical Society*, March 2011.



*University rankings affect the choices of many students, but a JRC report question their validity.*

## Innovation in practice

### SPIN-OFF COMPANY

[www.nucleonica.net](http://www.nucleonica.net)

#### *New JRC spin-off to work on the Nucleonica portal*



As of March 2011, a new JRC spin-off company, Nucleonica GmbH, has been created. This company was established by a former staff member to undertake the further development of the Nucleonica portal – a nuclear science web portal developed at the JRC's Institute for Transuranium Elements (ITU).

The Nucleonica portal provides users with access to various web-based nuclear science applications and programmes, social networking tools, basic nuclear data on more than 3800 radionuclides, and an array of databases, graphics, and other informative material.

The spin-off is also expected to work towards the further development and distribution of the Karlsruhe Nuclide Chart (KNC) in the coming months. The KNC is an extended

*Nucleonica GmbH has been established by a former JRC staff member to undertake the further development of the Nucleonica portal for nuclear science.*



periodic table of elements, which displays all known isotopes of all atomic elements and their radioactive data. It provides scientists and students all over the world with structured, accurate information on the half-lives and decay modes of radionuclides, as well as the energies

of emitted radiation. It has also been developed at the ITU, in partnership with the Karlsruhe Institute of Technology of Germany.

The JRC encourages its research staff to take entrepreneurial initiatives as part of its efforts to disseminate the results

of its research to the wider public. To this end, it supports the creation of 'spin-off' companies to bring the innovation originating from inside the JRC to the marketplace. Nucleonica GmbH is the latest result of these efforts.

## JOB OPPORTUNITIES

<http://nmi.jrc.ec.europa.eu/laboratories/cyclotron.htm>

### ***Enlargement and integration: 40 posts available at the JRC***

The JRC has launched a call for 40 seconded national experts and grantholders as part of its enlargement and integration actions. The job opportunities are available for experts from research organisations, national enforcement laboratories and scientists from the following countries: Albania, Croatia, Iceland, Montenegro, Switzerland, Bosnia and Herzegovina, FYR of Macedonia, Israel, Serbia and Turkey. These positions will be available in JRC's seven institutes.

In addition, the JRC offers specialised enlargement and integration workshops and advanced training courses within its areas of competence. The workshops are set up to allow competent organisations in the new Member States, candidate countries, potential candidate countries, FP7 associated countries, European Neighbourhood Policy countries and Russia to study the scientific and technical methods and techniques underpinning EU policy implementation. They also provide an opportunity for EU organisations to learn about the methods currently used in those countries.



*The JRC recruits national experts and grantholders from a number of different states to work in its different institutes.*

## EVENTS

### NANO-TECHNOLOGY

<http://www.nano.gov/html/meetings/us-eu/agenda.html>

USA

MARCH 2011

### ***US-EU joint workshop "Bridging nanoEHS Research Efforts"***



*The joint workshop organised in Washington D.C. in March provided an open forum for discussion and encouraged networking for future cooperation between European and American partners.*

European and US scientists, policymakers and industry researchers discussed concerns related to nanomaterials and nanotechnology-based products in a joint workshop environmental, health and safety (EHS). It was held in March in Washington, D.C.

JRC's Institute for Health and Consumer Protection (IHCP) Director, Elke Anklam, emphasised during the opening the need for a transition

process from research on new technologies to their inclusion in the legislation. She also highlighted that harmonisation of safety assessment methods are key to success together with an adequate definition of nanomaterials.

The workshop provided an open forum for discussion and encouraged networking for future cooperation between European and American partners.

## UPCOMING

<http://ec.europa.eu/dgs/jrc/index.cfm?id=6070>

## FORESIGHT

[http://foresight.jrc.ec.europa.eu/fta\\_2011/intro.html](http://foresight.jrc.ec.europa.eu/fta_2011/intro.html)

ES

12-13 MAY

**4<sup>th</sup> International Seville conference on Future-Oriented Technology Analysis**

The 4th International Seville Future-Oriented Technology Analysis (FTA) Conference will be held 12 - 13 May 2011, at the JRC's Institute for Prospective Technological Studies (IPTS) in Seville, Spain. The focus of the conference is

on the need and potential of FTA to address dynamic and disruptive events in response to grand societal challenges. These events may range from rapid technological changes to shifts in social norms, values and lifestyles. This bi-annual conference is an opportunity for the scientific and policy-maker community in the FTA area to meet and to mutually deepen their knowledge.



*The 2011 FTA Conference is a bi-annual conference which will this year focus on the need and potential of FTA to address dynamic and disruptive events in response to grand societal changes.*

The 2011 FTA Conference looks forwards to contributions from academics, research, business, government, intermediary organisations and civil society representatives across the globe. Posters, scientific papers and presentations can be submitted. These should address one of the three conference themes and explain theoretical components, novel methodological approaches, potential or actual results and impacts, and policy options for FTA.

## OPEN DAY

<http://www.jrc.ec.europa.eu/ispra-openday-2011>

IT

14 MAY

**Open day at the JRC Ispra site**

On 14 May 2011 the JRC site in Ispra will again open its doors to the public. After the highly successful Open Day in 2009 (with more than 8,000 participants), the 2011 Open Day promises to be even bigger and better. The day's programme will give more exposure to interesting laboratories with more interactive experiments as well as lively presentations, shows and entertainment for all age groups. Again, a special programme with scientific games and quizzes will be prepared for younger attendees.

Note: Registration is necessary.



2009 Ispra Open Day visitors learnt about nanobiotechnology and water sampling among other topics.





## JOBS AT THE JRC

<http://www.jrc.ec.europa.eu/jobs>

### RECENTLY PUBLISHED

(Applicants must submit their application no later than the indicated deadline)

#### Brussels, Belgium

##### Seconded National Expert

Expert on intellectual property rights management – **15 May**

#### Ispira, Italy

##### Trainee

- Development of prototype indicators for holistic land-ocean biosphere assessment – **2 May**
- Improving Capacity Building and Stakeholders Participation in Water Resources management towards sustainable policy implementation – **2 May**
- Desertification and Land Degradation Map Preparation – **2 May**
- Alien species invasions: contribution to understanding mechanisms and controls – **2 May**
- INSPIRE Communication – **2 May**
- Spatial data sets and services and workflow modelling – **2 May**

##### Grantholder (Post-doc researcher)

- Indicators for the European Research Area – **19 April**
- Assistance in the assessment of biofuels/bioenergy sustainability – **20 April**
- Energy efficiency and range of electric/hybrid vehicles – **20 April**
- Technical Scientific Support for Energy Efficiency in Buildings – **20 April**
- Well-to-wheels analysis of future automotive fuels and powertrains in Europe – **20 April**
- Controlled languages for qualitative evaluation and ordering of documents on the protection of critical infrastructures – **20 April**
- GNSS Security – **20 April**
- Bio-economic modelling in fisheries – **26 April**
- Fisheries Economist – Socio-economic performance of the EU fishing fleet, fish processing sector and aquaculture – **2 May**
- Maritime Surveillance IT Researcher on Community Information Sharing Environment (CISE) – **10 May**

##### Senior researcher

- Senior fisheries scientist – **19 April**
- CO<sub>2</sub> from transport – **20 April**
- Intelligent Transport Systems – **20 April**
- Numerical modelling and multidimensional analysis – **20 April**

#### Petten, The Netherlands

##### Grant holder (Post-doc researcher)

- Geological storage of carbon dioxide - Assessment of storage capacity, safety and risks – **29 April**
- Modelling the interaction between the EU energy policy goals and the deployment of low carbon energy technologies – **29 April**
- SES - Smart Electricity Systems – **29 Apr**
- Wind energy - Assessment of techno-economic performance – **29 Apr**

##### Senior Researcher

- Co-Author of new "Large Combustion Plant" BREF – **20 May**

The JRC Newsletter is a bi-monthly publication intended to provide JRC customers, stakeholders and other interested parties with an overview of recent highlights from the JRC's scientific achievements, policy support, contributions to events and other news.

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**Editor in chief:** David Wilkinson  
**Production team:** Geraldine Barry, Lieven Creemers, Branka Kostovska, Jörel Strömberg, Robyn Webster

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